What is claimed is:

1. A method of multi orbital engagement wherein all of the rolling parts of said engagement oppose partial decrease of the orbital eccentricity of device races of any shape.

2. The method according to claim 1 wherein rolling parts with multi orbital positioning (MOP) without slacks between rolling parts and engaged races, and orbital eccentricity (OE) of races is ensured, even in the case of substantial wear and elastic deformation of parts, due to specific choice of sizes of rolling parts.

3. The method according to claim 1 or 2 wherein the value of OE or working orbital eccentricity WOE of the device is fixed by fixing axes of two dissimilar parts of the device in the presence of stabilizing force F, or by fixing axes of three dissimilar parts of said device in the absence of stabilizing force F.

4. The method according to claim 1 or 2 or 3 further enabling to change OE of the device and modes of interactions of parts wherein the value and direction of a stabilizing force F (changing OE of MOD) is controlled in real time, said control includes setting of necessary working orbital eccentricity (WOE) of engaged surfaces, said setting determining the radial forces of coupling of parts, the required mode of friction between them and value of transferred moment in a range between zero and maximal moment limited by durability of parts.

5. The method according to claim 3 wherein for fixed value of OE-WOE the tightness of coupling between parts of the device is self-stabilizing even in the case of substantial wear of parts.

6. The method according to claim 4 wherein real time adjustment of the device parameters include controllable and reversible loss of contacts between rolling parts and races.

7. The method according to claim 4 wherein a working load, any force, caused by said working load or any external force are used as the stabilizing force F.

8. The method according to claims 4, or 5, or 6 wherein the applied force F limits a value of a maximal moment, transferred by said device.

9. The method according to claim 5 wherein a self-stabilizing of tightness of coupling between parts of device with a fixed value of OE-COE is performed by providing automatic deflection of axes of the rolling parts from being orthogonal to a meridian plane of the device.

10. The method according to claims 4, or 5, or 6, or 8, or 9 further enabling reversible real time activation-inactivation of clutch, wherein the control of stabilizing force F and tightness of couplings between parts is performed by deflecting axis of OE of device in the meridian plane with respect to direction of working load force.

11. The method according to claims 4-10 wherein a force F is directed to decrease OE - for increase of transferred moment or activation of operational mode of the device, or alternatively, force F is directed to increase OE –for decrease of transferred moment or inactivation of operational mode the device.

12. The method according to claims 5 wherein an automatic deflection of axes of rolling parts is ensured by forces resulting from difference of frictional forces at opposite ends of rolling parts.

13. The method according to claim 5, or 7, or 8, or 9, or 11, or 12 wherein a difference of frictional forces at opposite ends of rolling parts is ensured by using different radial sizes of rolling parts in their different meridian cuts across points at opposite ends of rolling parts, which are in contact with other parts.

14. The method according to claims 5, or 7, or 8, or 9, or 11, or 12 wherein for the use of force F originated from other devices, more than one device are engaged to be a

composite device, having their WOE rotated with respect to each other in the meridian plane and mutually preventing change of their WOE.

15. The method according to claims 1-14 wherein the device is supplemented by races of axial or radial-axial engagement with any rolling parts of any orbital row.

16. The method according to claims 1-15 wherein the OE of device is changed by replacing of at least one part not effecting significantly all device parameters.

17. The method according to claims 1-16 wherein the direction of relative rotation of engaged races is determined by a combination of a number of orbital rows of rolling parts and parameters of gear ratio of rolling parts from different orbital rows.

18. The method according to claims 1-17 further enabling to use simultaneously several orbital rows of rolling parts, positioned along the axes of races of the device and of the same order of radial positioning with respect to any of races of the device.

19. The method according to claims to 1-18 wherein rolling parts with different or identical sizes and shapes of their normal and axial cuts are used at each orbital row of system MOP.

20. The method according to claims 1-19 wherein for an adjustment of value of OE the engaged races are relatively displaced in real time, in any direction in meridian plane MOD changing OE in a range between WOE and value, which guarantees slacks in the engagement, achieved by methods known in the prior art.

21. The device according to claims 1-20 wherein multi orbital differential reduction gear comprised of an inner race, an outer race engaged without slacks by rolling parts of MOP, having eccentricity is guaranteed even in the case of substantial wear and deformation of parts due to a force, directed to decrease an orbital eccentricity of races.

22. The device implemented in multi orbital differential reduction gear wherein stepped rolling parts of MOP roll on other parts with a gear ratio according to claims 21.

23. The device implemented in multi orbital bearing-reduction gear wherein a desirable gear ratio of rolling parts of MOP equals a ratio of radii of engaged races according to claims 21, or 22.

24. The device implemented in multi orbital bearing or reduction gear or their combination wherein at least one of engaged races has spherical track according to claims 21-23.

25. The device implemented in multi orbital bearing or reduction gear wherein at least one of engaged rolling parts has different radii at contact points at opposite ends according to claims 21-24.

26. The device according to claims 21-24 wherein multi orbital clutch mechanism can be combined with reduction gear or bearing wherein races can move with respect to each other in a meridian plane changing a value of the orbital eccentricity.

27. The device according to claims 21-26 composite of multi orbital reduction gear or bearing or clutch mechanism or any device combining at least two of them having orbital eccentricity of these multi orbital devices directed at some angle to each other in a meridian plane.

28. The device implemented in crank mechanism combined with a reduction gear or bearing or clutch gear with at least one of rolling parts engaged with crank according to claims 21-27.

29. The device implemented in volume pump or engine combined with at least one of reduction gear, bearing, clutch mechanism or crank mechanism with spaces between rolling parts isolated by side washers having at least two valve slots according to claims 21-27.

30. The device according to claims 21-28 wherein at least on part in not circular in a normal cut.

31. The device according to claims 21-29 wherein some of parts are manufactured of much less durable materials than that used in conventional bearings.

32. The device according to claims 21-30 wherein at least one part is engaged with at least one part of other device rotating and moving orbitally.

33. A bearing device having free rolling parts, comprised of:
- an inner race
- an outer race;
- at least two rows of rolling parts wherein each rolling part is in contact with two adjacent rolling parts in the same row and with rolling parts of at least one adjacent row and/or with the surface of one of the races;

wherein the bearing structure is designed to create orbital eccentricity between the inner race and the outer race.

34. The device of claim 33 wherein a load applied on said bearing is equally distributed over all rolling parts.

35. The device of claim 33 wherein a load applied on said bearing decrease the deviation between the geometric centers of the inner race and the outer race, wherein minimum limit of orbital eccentricity is maintained through the working process.

36. The device of claim 33 wherein the engagement of rolling parts is slack-free.

37. The device of claim 33 wherein bearing structure is designed to ensure a relative rotation of races with all rolling parts.

38. The device of claim 33 wherein the axis of the orbital eccentricity is directed at a specific angle designed to oppose the direction of an applied load power.

39. The device of claim 33 wherein the ratio of rolling parts radii is designed in accordance with the desirable reduction rate between the rolling parts in contact.

40. The device of claim 33 wherein the a rolling part radius varies along their axis.

41. The device of claim 33 wherein the inner race is comprised of two parts, each race part having different track, further having two rows of rolling parts at the same orbit.

42. The device of claim 33 implemented in crank mechanism for creating linear motion wherein the crank piston is connected to one of the rolling parts.

43. A gear mechanism comprised of at least one bearing device as described in claim 33.

44. The mechanism of claim 43 wherein the axis orbital eccentricity has different direction in each bearing device.

45. The device of claim 33 implemented in extrusion pump or gas-liquid engine, said device further including two radial opening at the outer race enabling the flow of air or liquid between the openings, wherein the a pressure is created between inner spaces of the rolling parts, each space has a different volume due to rolling parts ratios and orbital eccentricity.

46. The device of claim 33 wherein the orbital eccentricity is determined in accordance with the quality of materials, design and manner of operation of the device in which the device is installed.

47. The device of claim 33 wherein the inner race axis is fixed in a massive housing.

48. The device of claim 33 wherein the axis of one of the rolling parts is fixed by an auxiliary bearing.